

**Technological Educational Institute (TEI) of Athens,
Greece**

**The Department of Biomedical Engineering
is organising the
BIOME P 2015 - Conference on Bio-Medical Instrumentation and
related Engineering and Physical Sciences**

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Greek National Resources under the framework of the "ARISTEIA" project MISCIRLU
code no.1476 of the "Education & Lifelong Learning" Operational Programme**

Conference endorsed by the **International Federation of Medical and Biological
Engineering (IFMBE)**

Conference referred and accepted papers will be published by the **Journal of Physics:
Conference Series (IOP Publishing)**

Thursday 18 to Saturday 20, June 2015

PROGRAMME

Thursday 18 June 2015

9:00 – 13:00 **Registration**

9:00 – 9:30 **Welcome Speeches**

- Prof. M. Bratakos, President of TEI of Athens, Greece
- Prof. D. Triantis, Vice Rector of TEI of Athens, Greece.
- Prof. S. Athinaios, Dean, Faculty of Technological Applications, TEI of Athens, Greece
- Prof. E.Ventouras, Head of the Department of Biomedical Engineering



Oral Sessions (9:30 – 18:00)

9:30 – 11:00 Session 1. Scintillators and Phosphors

Session Chairpersons: *E. Zych*, Wroclaw University, Poland & *N. Kalyvas*, T.E.I. of Athens

9:30-9:50 Invited speech: Medical Image Science through luminescence (MISCIRLU project)

I. Kandarakis, I. Valais, G. Fountos, N. Kalyvas, P. Liaparinos, C. Michail, S. David

9:50-10:10 Invited speech: Phosphors Processing and their Properties – the Case of SrS:Ce

D. Kulesza, K. Fiaczyk, A. Wiatrowska, E. Zych

10:10-10:30 Invited speech: Morphology control of Lu₂O₃:Eu x-ray phosphor

J. Zeler, E. Zych

10:30 – 10:40 the role of near infrared fluorescence imaging in endocrine surgery: Systematic review

E. Yiannakopoulou

10:40 - 10:50 A theoretical study of optical photon propagation in granular scintillator detectors

N. Kalyvas, C. Michail, G. Fountos, I. Valais, P. Liaparinos, S. David, I. Kandarakis.

10:50 - 11:00 X-ray imaging performance of thin semitransparent films of LuPO₄:Eu

I. Seferis, J. Zeler, C. Michail, I. Valais, G. Fountos, N. Kalyvas, A. Bakas, I. Kandarakis, E. Zych

11:00 - 11:30 Coffee Break

11:30 – 13:10 Session 2. Medical Imaging I

Session Chairpersons: *Prof. R. Speller*, University College London, UK and *Assoc. Prof. G. Fountos*, T.E.I of Athens

11:30-11:50 Invited speech: An evaluation of the clinical potential of tissue diffraction studies

R.D. Speller, S. Abuchi, Y. Zheng, N. Vassiljev, A.Konstantinidis, J. Griffiths

11:50-12:10 Invited speech: Predicted image quality of a CMOS APS x-ray detector across a range of mammographic beam qualities

A. Konstantinidis

12:10 – 12:20 Lower limit of detection in x-ray diffraction measurements of breast tissue equivalent samples

Y. Zheng, N. Vassiljev, A. Konstantinidis, J. Griffiths, R. Speller

12:20-12:30 CMOS Active pixel sensor x-ray detector for dual energy contrast enhanced digital mammography

I. Billas, A. Konstantinidis, R. Speller

12:30 - 12:40 Hybrid Pixel Detectors for gamma/X-ray imaging

D. Hatzistratis, G. Theodoratos, V. Zografos, I Kazas, D. Loukas, and C. P. Lambropoulos.

12:40 - 12:50 3-D Localization of Gamma Ray Sources with Coded Apertures for Medical Applications

I. Kaissas, C. Papadimitropoulos, C. Karafasoulis, C. Potiriadis and C.P. Lambropoulos.

12:50 - 13:00 Calcium/Phosphorus mass ratio for breast microcalcification characterization

N. Martinj, V. Koukou, C. Michail, I. Kandarakis, G. Nikiforidis and G. Fountos

13:00 - 13:10 Experimental and theoretical study of the photoreceptor effect in indirect conversion digital detectors

N. Kalyvas, I. Valais, C. Michail, G. Fountos, P. Liaparinos, S. David, I. Kandarakis.

13:30 - 15:00 Break

15:00 - 16:15 Session 3. Round Table: Pediatric CT dosimetry

Session Chairpersons: Assoc. Prof. E. Efstathopoulos, Medical Radiation Physics, 2nd Dept. of Radiology, Medical School, University Of Athens and Dr. F. Makri, Paediatric General Hospital "Ag. Sofia"

15:00 - 15:15 Overview of CT dosimetry methods

S. Kordolaimi,

Medical Physicist, 2nd Radiology Department, University Of Athens

15:15 - 15:30 Establishment of National Diagnostic Reference Levels (DRLs) for Pediatric Computed Tomography (CT examinations)

S. Economides,

Radiation Physicist, PhD, Greek Atomic Energy Commission

15:30 - 15:45 Individualized CT dosimetry in pediatric patients

A. Ploussi,

Medical Physicist, 2nd Radiology Department, University Of Athens

15:45 - 16:00 Personalized CT dosimetry Monte Carlo simulations using Pediatric Computational phantoms

P. Papadimitroulas,

Department of Medical Physics, University Of Patras

16:00 - 16:15 Automated DICOM metadata and volumetric anatomical information extraction for dosimetry

D. Papamichail,

Resident Physician, PhD, University Of Athens

16:15 - 16:30 Break

16:30 - 18:00 Session 4. Round Table: Special Techniques in Radiotherapy*Duration 90 min**Session Chairpersons: Dr. P. Platoni, Medical Physicist, Attikon Hospital, University Of Athens and Dr. C. Antypas, Medical Physicist, Aretaieion Hospital, University Of Athens***16:30 - 16:50 Total Skin Electron Beam Irradiation***M. Dilvoi**Medical Physicist, Attikon Hospital, University Of Athens***16:50 - 17:05 Image Guided Brachytherapy: The paradigm of Gynecologic and Partial Breast HDR Brachytherapy***S. Diamantopoulos, I. Kantemiris, A. Konidari, P. Zaverdinos***17:05 - 17:20 Proton Therapy***S. Zefkili**Medical Physicist, Curie Institute, Paris, France***17:20 - 17:40 Hyperthermia as anticancer treatment***C. Antypas**Medical Physicist, Aretaieion Hospital, University Of Athens, Greece***Parallel Poster Session-A (10:00– 13:30)***Session Chairpersons: Dr. S. David, Dr. C. Michail and Ms. V. Koukou**24 Posters*

Friday 19 June 2015

9:30 – 13:00 Registration

Oral Sessions (9:00 – 19:00)

9:00 – 10:30 Session 1. Biomedical Data Processing

Session Chairpersons: Prof. D. Cavouras and Prof. E. Ventouras, T.E.I. of Athens

9:00-9:20 Invited speech: "Towards a model for automatic voice pleasantness classification" Prof. Luis Coehlo, Politecnico Do Porto, Portugal

09:20 – 9:30 Software platform for managing the classification of error-related potentials of observers

P. Asvestas, E. Ventouras, S. Kostopoulos, K. Sidiropoulos, V. Korfiatis, A. Korda, A. Uzunoglu, I. Karanasiou, I. Kalatzis and G. Matsopoulos

9:30 - 9:40 Automatic Segmentation of Focal Liver Lesions in MR Images by means of Markov-Random Fields with edge-driven Fuzzy C-means initialization

I. Gatos, S. Tsantis, M. Karamesini, A. Skouroliakou, G. Kagadis

9:40 - 9:50 Optimal Elasticity Cut-off value for discriminating Healthy to Pathological Fibrotic patients employing Fuzzy C-Means automatic segmentation in Liver Shear Wave Elastography images.

I. Gatos, S. Tsantis, A. Skouroliakou, I. Theotokas, P. Zoumpoulis, G. Kagadis

9:50 - 10:00 Tract-based spatial statistics analysis and fMRI in patients with small cell lung cancer before prophylactic cranial irradiation treatment.

S. Benezi, K. Bromis, E. Karavasilis, I. Karanasiou, M. Koutsoupidou, G. Matsopoulos, E. Ventouras, N. Uzunoglu, V. Kouloulis, M. Papathanasiou, A. Foteineas, E. Efsthathopoulos, N. Kelekis, D. Kelekis

10:00 - 10:10 Artificial intelligence methods applied to parameter optimization in detection of atrial fibrillation

D. Arotaritei, C. Rotariu.

10:10 - 10:20 G-Autonomy of EEG recordings of psychotic patients in undergoing the primitive expression form of dance therapy

E. Ventouras, I. Lardi, S. Dimitriou, A. Margariti, P. Chondraki, N.-T. Economou, H. Tsekou, T. Paparrigopoulos, P. Ktonas.

10:20-10:30 Incorporation of a two metres PET scanner in STIR library.

C. Tsoumpas, C. Brain, T. Dyke and D. Gold

10:30 - 11:00 Coffee Break

11:00 – 12:15 Session 2. Round table: The intervention of Health and Welfare Inspector in the Biomedical Instrumentation field

Session Chairpersons: Dr. S. Evangelatos, General Health Inspector, Ministry of Health and F. Dinaki, Special Inspector, General Inspector of Public Administration

11:00 - 11:15 The Opportunities and Risks of the Inspection in the Field of Biomedical Instrumentation

F. Dinaki,

Special Inspector of the Office of General Inspector of Public Administration.

11:15 - 11:30 Quantitative Data of SEYYP Inspection in Biomedical Instrumentation Field

S. Evangelatos,

Ministry of Health in Greece, SEYYP, 205 Pireos Ave., 11 853 Athens, Greece

11:30 - 11:45 Intervention of Health and Welfare Inspector concerning the use of neurostimulator in central nervous system in Greece

M. Adamopoulou, G. Belis, A. Sotirchou, V. Vigklis, S. Evagellatos,

Ministry of Health in Greece, SEYYP, 205 Pireos Ave., 11 853 Athens, Greece

11:45 - 12:00 Cytostatics Preparation Units in Greek Healthcare System

A. Tsamadou, A. Triantafillidou, V. Vigklis, S. Evagellatos,

Ministry of Health in Greece, SEYYP, 205 Pireos Ave., 11 853 Athens, Greece

12:00 - 12:15 The Intervention of Health and Welfare Inspector for Purchasing PET/CT Scanners at Public Hospitals in Greece

E. Kounadi, M. Adamopoulou, A. Triantafillidou, V. Vigklis, S. Evagellatos,
Ministry of Health in Greece, SEYYP, 205 Pireos Ave., 11 853 Athens, Greece

12:20 - 13:30 Session 3. Novel Applications in Treatment and Diagnosis

Session Chairpersons: *Prof. A. Bakas* T.E.I. of Athens and *Assist. Prof. A. Skouroliakou*, T.E.I. of Athens

12:20 – 12:30 Practical aspects of patient – specific Dosimetry in peptide receptor Radionuclide Therapies: how to and why

M. Chalkia, A. Stefanoyiannis, S. Chatziioannou, E. Efstathopoulos, G. Nikiforidis

12:30 – 12:40 Assessment of the effect of spatial dose delivery inaccuracies on DVHs: Simulation studies in pituitary-tumour and brain-metastases cases

N. Kourmpasi, E. Pappas, I. Seimenis

12:40 - 12:50 TGF-B Induced epithelial – mesenchymal transition modeling

P. Xenitidis, I. Seimenis and A. Adamopoulos

12:50 - 13:00 On the implementation of a novel patient-specific QA process for pre-treatment radiotherapy plan verification in brain tumor patients. An hypophysis VMAT treatment case study

E. Pappas, G. Kalaitzakis, T. Boursianis, T. G. Maris, D. Makris and E. Efstathopoulos

13:00 -13:10 Configuration, Validation, and Evaluation of the dose calculation algorithm Acuros® XB

S. Zefkili, I. Birba

13:30 - 15:00 Break

15:00 - 16:00 Session 4. Medical Devices and Innovations

Session Chairpersons: Assoc. Prof. M. Kallergi, TEI of Athens and Dr. M. Metaxas, Ph.D., Radiation Protection Officer, B.R.F.A.A.

15:00 – 15:10 The application of the Selective Laser Sintering technique (SLS) in the production of dental bioconstructions

K. Dimitriadis, K. Spiropoulos, T. Papadopoulos

15:10 - 15:20 A low cost sensor controller for health monitoring

M. Birbas, N. Petrellis, F. Gioulekas

15:20 - 15:30 Repeatability of Corneal Astigmatism Measurement Evaluated with Color LED Reflection Topography

S. Georgiadou, A. Kanellopoulos, P. Mylova, M. Chalikia, M. Chiridou, G. Asimellis

15:30-15:40 Modelling and Simulation of the Knee Joint with Kinect for Prosthetics and Rehabilitation

S. Risto and M. Kallergi

15:40 - 15:50 Epithelial Three – Dimensional Thickness as a Sensitive Tool of Keratoconus Diagnosis.

S. Georgiadou, A. Kanellopoulos, C. Roussou, F. Tzani, G. Asimellis

15:50 - 16:00 Enhanced Topography-Guided Excimer Laser Ablation for Progressive Keratoconus Management: Incorporation of Cyclorotation and Modified Laser Sequence.

S. Georgiadou, A. J. Kanellopoulos, G. Chatzilaou, V. Moustou, G. Asimellis

16:00 - 16:30 Break

16:30 - 17:30 Session 5. Round Table: Quality and Safety in Hospital Environment

Session Chairpersons: *Dr. M. Evangelatou, Dr. T. Giannouli and Dr. G. Pappous,* National Evaluation Center of Quality & Technology in Health S.A. and *Prof. N. Palikarakis,* University of Patras

16:30-17:00 Safety and Quality in Health Care

T. Giannouli,

17:00-17:30 EU Regulatory Framework for Medical Devices

G. Pappous,

17:30-17:40 Needs assessment in primary health care in Greece

V. Costarides, T. Giannouli, G. Pappous, K. Giokas, D. Koutsouris

17:40-17:50 Impact of Economic Crisis on the Greek National Health System: A Statistical analysis of the factors contributing to the quality of health care in Greece, in terms of medical personnel and medical equipment .

Ch. Frangos, C. Fragkos, I. Sotiropoulos

Parallel Poster Session-B (10:30– 13:30)

Chairpersons: *Dr. N. Efthimiou and Dr. S. Kostopoulos*

24 Posters

Saturday 20 June 2015

9:30 – 11:00 Registration

Oral Sessions (9:00 – 18:00)

9:00 – 10:30 Session 1. **Medical Imaging II**

Session Chairpersons: *M. Gambaccini and A Taibi*, Universita degli di Ferrara, Italy

9:00-9:20 Invited speech: Digital mammography with synchrotron radiation: characterization of a novel computed radiography system

Dr. A. Taibi, Universita degli studi di Ferrara, Italia

9:20-9:40 Invited speech: Echo-Doppler system performance measurement with constant and pulsatile flow generators

M. Gambaccini and F. Calderoni, Universita degli studi di Ferrara, Italia

09:40 – 9:50 Simultaneous measurement of R2* and fat fraction of the liver by a multi-echo gradient-echo pulse sequence in a breath hold

D. Gotsis, P. Karaiskos, I. Seimenis.

09:50 - 10:00 The Application of Computed Tomography in Wound Ballistics Research

N. Tsiatis, K. Moraitis, S. Papadodima, C. Spiliopoulou, A. Kelekis, C. Kelesis, E. Efstathopoulos, S. Kordolaimi, A. Ploussi

10:00-10:10 Contrast to Noise Ratio and Contrast Detail Analysis in Mammography: A Monte Carlo Study

V. Metaxas, H. Delis, C. Kalogeropoulou, P. Zampakis, G. Panayiotakis

10:10 - 10:20 A dual energy method for breast microcalcification imaging: experimental results

V. Koukou, G. Fountos, N. Martini, C. Michail, P. Sotiropoulou, G. Oikonomou, A. Bakas, N. Kalyvas, I. Kandarakis, R. Speller and G. Nikiforidis

10:20 - 10:30 Dynamic infrared thermography study of blood flow relative to lower limb position

I. Stathopoulos, K. Skouroliakou, C. Michail and I. Valais

10:30 - 11:00 Coffee Break

11:00 – 12:00 Session 2. Dosimetry in Radiology and Nuclear Medicine

Session Chairpersons: *Dr. J Horrocks, London, UK and Dr. C. Hourdakis, Greek Atomic Energy Commission*

11:00-11:20 Invited speech: An evaluation of the impact of digital imaging on radiographic practice and patient doses.

J. Horrocks and K. Violaki

11:20 – 11:30 Organ dose and risk assessment in paediatric radiography using the PCXMC 2.0

A. Ladia, G. Messaris, H. Delis, G. Panayiotakis

11:30 - 11:40 The electromagnetic environment of magnetic resonance imaging systems. Occupational exposure assessment reveals RF harmonics

G. Gourzoulidis, E. Karabetsos, N. Skamnakis, C. Kappas, K. Theodorou, I. Tsougos and T. G. Maris.

11:40 - 11:50 Dosimetric evaluation to medical workers operating in a PET/CT department after the use of dynamic techniques.

K. Dalianis, G. Kollias R. Efthimiadou, J. Andreou, V. Prassopoulos

11:50 - 12:00 Medical workers operating in Nuclear Medicine vs PET/CT: Radiation exposure comparison

K. Dalianis, J. Malamitsi, G. Kollias, R. Efthimiadou, J. Andreou, V. Prassopoulos

12:00-12:10 Measuring the effective dose to caregivers from patients undergoing common radionuclide therapies: Dosimetry strategies

A. Stefanoyiannis, S. Ioannidou, M. Chalkia, W. Round, E. Carinou, M. Mavros, T. Liotsou, X. Geronikola-Trapali, I. Armeniakos, S. Chatziioannou

12:20-12:40 Invited speech: Scientific Misconduct

Prof. C. Kappas,

Dept of Medical Physics Department, University of Thessaly, Greece

12:40 – 13:30 Session 3. Round Table: Advanced Techniques in Radiotherapy

Organized by HAMP

Session Chairpersons: *Assoc. Prof. K. Theodorou, Medical Physics, Medical School, University of Thessaly and S. Nikolettopoulos, Medical Physicist, Secretary General of HAMP*

12:40 - 12:55 Patient Specific QA in IMRT/ VMAT treatments

S. Papageorgiou

Medical Physicist, IASO General Hospital, Athens, Greece

12:55 - 13:10 Dose Painting and Adaptive RT

C. Antypas

Medical Physicist, IATROPOLIS Group, Athens Greece

13:10 - 13:25 Image Guided RT

E. Koutsouveli

Medical Physicist, Hygeia Group, Athens, Greece

13:25 – 13:30 Open Discussion**13:30 - 15:00 Break****15:00 – 16:00 Session 4. : Emergency/ICU/Surgery and Home-Care Technology**

Session Chairpersons: *Prof. B. Spyropoulos and Dr. A. Tzavaras, TEI of Athens*

15:00 - 15:20 Invited speech: Successfully Aging: An Illusion A Burden Or An Opportunity?

B. Spyropoulos

Department of Biomedical Engineering, TEI of Athens, Greece

15:20 - 15:30 "Experimental Determination Of The Modulation Transfer Function (MTF) Of Bed-Side Devices Employed In Home-Care

A. Jawabra

15:30 - 15:40 Algorithms and software for fibrillation detection in home-care

A. Tzavaras

15:40 - 15:50 Secured Web-Based Home-Care Management

M. Botsivaly, V. Pierros, M. Marinis, A. Tzavaras, M. Kallergi, B. Spyropoulos.

15:50 - 16:00 Quality Assurance (QA) Optimization of Tandem Mass-Spectrometry (Ms/Ms) employed for Neonatal-Screening by using Specific Aminoacids and Acylcarnitines standard-solutions

K. M. Armyrioti, D. Katakouzinis, V. Papakonstantinou, B. Spyropoulos

16:00 - 16:30 Break

16:30 – 17:20 Session 5. Biomedical Instrumentation – Applications in Nanomedicine

Session Chairpersons: *Assist. Prof. G. Loudos, TEI of Athens and Dr. M. Georgiou, BET Solutions*

16:30 - 16:45: Non-invasive temperature measurements in magnetic induced hyperthermia using nanoparticles

V. Theofylaktopoulos, E. Efthimiadou, G. Kordas, G. Loudos

16:45 - 17:00: Molecular imaging during magnetic induced hyperthermia: Technical limitations and proposed solutions

M. Georgiou, L. Fysikopoulos, P. Papadimitroulas, N. Efthimiou, G. Loudos

17:00 - 17:20: Nanomedicine as a new vehicle for funding biomedical instrumentation

G. Loudos

17:30 - 17:45 Scientific Awards

17:45 - 18:00 Closing of Conference

POSTER SESSIONS

Parallel Poster Session-A (10:00– 13:30)

Session Chairpersons: *Dr. S. David, Dr. C. Michail and Ms. V. Koukou*

24 Posters

Thursday 18 June

- 1. Effect of the concentration on the X-ray Luminescence Efficiency of a Cadmium Selenide/Zinc Sulfide (CdSe/ZnS) Quantum Dot nanoparticle solution**

I Valais, C Michail, D Nikolopoulos, C Fountzoula, A Bakas, P Yannakopoulos, G.S. Panayiotakis and Ioannis S. Kandarakis

- 2. CT exams in Greece for the years 2012 and 2013**

E Kounadi, M Adamopoulou, H Merentitis, V Vigklis, S Evangelatos

- 3. Optical Coherence Tomography in Ophthalmology: Two Systems, Two Different Principles. An overview.**

M Rouchota, R Tsopouridou, V Liarakos

- 4. Electronic monitoring system of patients with chronic diseases**

P Koudounas, P Asvestas and D Cavouras

- 5. Biomedical Impact in Implantable Devices-The Transcatheter Aortic Valve as an example**

A Anastasiou, G Saatsakis

- 6. Integrated system for remotely monitoring critical physiological parameters**

S Alexakis, S Karalis and P Asvestas

- 7. Computational study of the optimum gradient magnetic field for the navigation of spherical particles into targeted areas**

N Lampropoulos, E Karvelas, D Papadimitriou and I Sarris

- 8. MINORE: A Medical Image, Noise and Resolution Evaluation Software**
N Martini, K Tselios, V Koukou, C Michail, G Fountos, N Kalyvas, I Kandarakis.
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- 9. Effect of energy on imaging performance of electronic portal imaging devices**
M. Tzomakas, A. Episkopakis, N. Kalyvas, C. Michail, I. Valais, G. Panayiotakis, I. Kandarakis
-
- 10. Remote monitoring of temperature and humidity in medical environments**
E Malavakis, P Asvestas
-
- 11. Modeling Patients' Height in PET/CT from Image and Anthropometry Data**
T Georgiou, and M Kallergi
-
- 12. Comparison of Vibration – Controlled Transient Elastography (VCTE) and Shear Wave Elastography (SWE) using Liver Biopsy as ‘Gold Standard’ for the diagnostic approach of chronic hepatitis and liver cirrhosis**
P Zoumpoulis, I. Theotokas, E. Manessis, I. Mathioudakis, O. Karapanagiotou
-
- 13. Study on the optical diffusion performance of granular phosphors employed in medical imaging**
P. Liaparinos, N. Kalyvas, S. David, C. Michail, I. Valais, G. Fountos, I. Kandarakis
-
- 14. Shielding of Sensitive Electronic Devices in Magnetic Nanoparticle Hyperthermia Using Arrays of Coils**
S Spirou, P Tsialios and G Loudos
-
- 15. PVAL Breast phantom dual energy calcification detection**
K. Velissarakos, D. Gkremos, V. Koukou, N. Martini, C. Fountzoula, A. Bakas, C. Michai, I. Kandarakis and G. Fountos
-
- 16. Effect of common building materials in narrow shaped x-ray fields transmission**
I Vlachos, N. Kalyvas, X. Tsantilas, H. Delis, G. Fountos, I. Kandarakis, G. Panayiotakis
-

17. Decay time measurements of powder scintillators used in X-ray imaging indirect detectors.

S. David, I. Valais, C. Michail, N. Kalyvas, I. Kandarakis

18. X-ray Luminescence efficiency of GAGG:Ce single crystal scintillators for use in Tomographic Medical Imaging Systems

S. David, I. Valais, C. Michail, I. Kandarakis

19. Absolute efficiency and statistical distribution of the light flashes emitted by the GOS:Pr powder phosphor screens under X-ray general radiography imaging conditions.

S. David, I. Valais, C. Michail, N. Kalyvas, P. Liaparinos, I. Kandarakis

20. Robotic Health Assistant: A Line-Following Prototype

N Charonitakis, C Savvoglou, M Kallergi

21. Component based normalization method for rotating dual head PET scanner.

N. Efthimiou, G. Loudos, G.S. Panayiotakis

22. A Theoretical study of the MTF of columnar phosphor based digital detectors used in Medical X-ray Imaging

K. Psichis, N. Kalyvas, I. Kandarakis and G. Panayiotakis

23. Information capacity of Gd₂O₂S:Pr, Ce,F scintillators coupled to CMOS sensor

C Michail, N Kalyvas, I Seferis, T Sideras, I Valais, G Fountos, A Bakas, G Panayiotakis and I Kandarakis

24. Influence of iterative reconstruction algorithms on PET image resolution

G Karpetas, C Michail, G Fountos, N Kalyvas, I Valais, D Nikolopoulos, I Kandarakis and G Panayiotakis

Parallel Poster Session-B (10:30– 13:30)**Chairpersons:** *Dr. N. Efthimiou and Dr. S. Kostopoulos*

25 Posters

Friday 19 June**25. A scintigraphic system based on SiPM-arrays optimized for small animal imaging***M Georgiou, E Fysikopoulos, N Efthimiou, P Papadimitroulas, P Tsalios, K Mikropoulos, G Loudos***26. SiPM-based PET camera for small animal imaging***M Georgiou, E Fysikopoulos, N Efthimiou, P Papadimitroulas, P Tsalios, K Mikropoulos, G Loudos***27. Investigation of Attenuation Correction in SPECT Using Textural Features, Monte Carlo Simulations, and Computational Anthropomorphic Models***S Spirou, P Papadimitroulas and G Loudos***28. OS-MRP-OSL in comparison to post-filtered OSEM, in highnoise simulated PET images***C Tsoumpas, N Efthimiou, K Karaoglanis, I Polycarpou***29. Modeling Gold Nanoparticles as Discrete Particles vs a Solution in Monte Carlo Simulations***D Makris, S Spirou, G Loudos***30. Denoising methods in Ultrasound images via GUI***I Leon, S Tsantis, I Kandarakis***31. The importance of registration optimizer to ILD quantification and follow up: quasi Newton and simultaneous perturbation***D Dimitriou, G Vlachopoulos, S Skiadopoulou, A Karahaliou, L Costaridou*

- 32. Optimization of the exposure settings in brain CT by utilizing an image quality phantom.**

G. Kareliotis, S. Kordolaimi, A. Ploussi, S. Argentos, E. Efstathopoulos

- 33. Evaluation of a small animal C-shaped PET system using GATE Monte Carlo simulations**

P. Papadimitroulas, N. Efthimiou, T. Kostou, G. Loudos

- 34. FPGA based digital readout system for a small animal imaging gamma camera**

E. Fysikopoulos, M. Georgiou, G. Loudos

- 35. Assessment of the skeletal status in postmenopausal women by MR Relaxometry in comparison to X-ray absorptiometry techniques**

P. Tsialios, E. Karavasilis, K. Stathopoulos, O. Benekos, G. Skarantavos, E. Efstathopoulos and D. Kelekis

- 36. Inter – comparison of resolution assessment methods and their effect in image quality parameters**

C. Michail, G. Fountos, I. Valais and I. Kandarakis

- 37. Dose Area Product to Effective Dose conversion factors for Vertebroplasty performed at a 3D Rotational Angiographic Unit and a Conventional Angiographic unit**

J. Antonakos, E. Michael, D. Filippidis, A. Kelekis, N. Parmenidou, E. Efstathopoulos, E. Brountzos, I. Seimenis

- 38. Peptide receptor radionuclide therapy (PRRT) in patients with metastatic neuroendocrine tumors efficacy – safety issues**

T. Liotsou, A. Stefanoyiannis, S. Chatziioannou

- 39. Assessment of the contrast to noise ratio (CNR) in Positron Emission Tomography scanners with Monte Carlo methods**

C. Michail, G. Karpetas, G. Fountos, N. Kalyvas, I. Valais, D. Nikolopoulos, I. Kandarakis and G. S. Panayiotakis

- 40. Development of the RF front – end for a multi-channel microwave radiometer for internal body temperature measurements**

S Karabetsos, G Koulouras, G Adamidis, I Vardiambasis and A Nassiopoulos

- 41. Title: ‘Estimation of the scattered energy spectra reaching the eye lens of the medical staff during interventional radiology: A Monte Carlo simulation study’**

A Zagorska, K Bliznakova, J Vassileva

- 42. Modeling Patients’ Height in PET/CT from Image and Anthropometry Data**

T Georgiou, and M Kallergi

- 43. MARK1 – Early stage detection of melanoma through a smartphone compatible designed decision support application**

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